

REMARKS

This Preliminary Amendment accompanies a request for continued examination (RCE).

In reply to a final Office action (dated April 27, 2006) applicant submitted an amendment dated August 2, 2006. An Advisory action indicated that although the amendments were entered, the claims are now rejected as unpatentable.

Claims 1-2, 4-7 and 9-18 are pending for further examination. Claims 1-2 and 6-7 are currently amended. Claims 11-28 are new. Claim 10 has been amended merely to correct a clerical error.

Previously filed claims 1-2, 4-7 and 9-10 were rejected as unpatentable over Tashiro (U.S. Patent No. 5,042,147) in view of Kado et al. (U.S. Patent App. No. 2004/0164385). Applicant has now filed an RCE and asks that all claims be examined in view of the following arguments.

Independent claim 1 has been amended to recite, in part, that back face electrodes are arranged on a back surface of a mounting substrate in concentric patterns and that each back face electrode of at least one of the concentric patterns is “directly and electrically connected to four neighboring back face electrodes by separate respective plating wires extending from the back face electrode of the concentric pattern.” Independent claims 2 and 6-7 have been amended to recite features similar to those incorporated in present claim 1. Examples of the features recited in claim 1 are shown in FIG. 2B of the specification (*see annotated FIG. 2B included with this response*). As shown in the attached sheet, back face electrodes 15 are arranged in four concentric patterns on a back surface of mounting substrate 11. The concentric patterns are highlighted and labeled “outermost,” “second,” “third,” and “innermost,” respectively. Each back face electrode of the “second” concentric pattern, for example, is directly and electrically connected to four neighboring back face electrodes by separate respective plating wires 18. It is evident from the attached and annotated FIG. 2B that each back face electrode of the “third” concentric pattern is also directly and electrically connected to four neighboring back face

electrodes by separate respective plating wires 18. In some implementations, the foregoing features may eliminate the need to form plating wires that extend from the peripheral regions of the mounting substrate to back face electrodes formed on patterns near the substrate center.

Neither the Tashiro patent nor the Kado et al. reference disclose or suggest directly and electrically connecting each back face electrode of at least one concentric pattern “to four neighboring back face electrodes by separate respective plating wires extending from the back face electrode” as recited in present claims 1-2 and 6-7.

As previously discussed, the Tashiro patent discloses forming fine-line patterns 3, on wiring board 5, that electrically connect individual bonding pads 2 to one another through a die pad 1 (*see FIG. 1*). Each bonding pad 2 includes a single fine-line pattern 3 connected to the die pad 1. The Tashiro patent does not, however, disclose or suggest directly connecting a back face electrode to four neighboring back face electrodes using separate respective plating wires that extend from the back face electrode as recited in present claim 1. Instead, as FIG. 1 clearly shows, the Tashiro patent only discloses a single fine line pattern 3 that extends from each bonding pad 2 to die pad 1. Furthermore, the bonding pads 2 of the Tashiro patent are not “directly” connected to neighboring electrodes by a plating wire. Instead, the bonding pads 2 are “indirectly” connected to other bonding pads via die pad 1.

In addition, the Kado et al. reference does not disclose or suggest that each back face electrode of at least one concentric patterns is “directly and electrically connected to four neighboring back face electrodes by separate respective plating wires” extending from the back face electrode. Although the Kado et al. reference discloses a plurality of solder bumps 11 on a back surface of package substrate 1, it does not disclose or suggest that any solder bump is “directly” connected to four neighboring electrodes by separate respective plating wires extending from the solder bump.

At least for the foregoing reasons, independent claims 1-2 and 6-7 should be allowed.

Claims 4-5 and 9-18 depend from those claims and should be allowed for at least the same reasons.

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Page : 9 of 9

Attorney's Docket No.: 14225-048001 / F1040146US0

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Conclusion

In view of the above remarks, all remaining claims are allowable and a notice of allowance should be issued.

The fee for the RCE is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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